Claims:

1. An ecofriendly process for acylation of alkylated benzene derivatives preferably at *para* position, said process comprising the steps of

(a) reacting the alkylated benzene derivatives with an acylating agent such as chloride or anhydride of carboxylic acid or its homologues essentially and selectively in the presence of a solvent selected from the group consisting of nitrobenzene, dichlorobenzene, dimethylsulfolane, benzonitrile or mixtures thereof and a crystalline alumino silicate catalyst having general formula:

$$M_{2/n}O.Al_2O_3.xSio_2.wH_2O$$

wherein,

M is an alkali and/or rare earth cation or proton,

Si/Al ratio is in the range of 5.5 to 20, and

the weight percentage of alkali and/or lanthanide cation is in the range of 10 to 30;

at temperature in the range of 80° to 140°C for a time period in the range of 5 to 25 hours;

(b) separating the solid catalyst from the reaction mixture of step (a), and

(c) separating the acylated alkyl benzene derivatives from the mixture of step (b).

2. A process as claimed in claim 1, wherein the alkylated benzene derivative is isobutylbenzene.

3. A process as claimed in claim 1, wherein the acylated alkyl benzene derivative is isobutylacetophenone.

4. A process as claimed in claim 1, wherein the acylated alkyl benzene derivative is preferably *p*-isobutylacetophenone.

5. A process as claimed in claim 1, wherein the crystalline alumino-silicate catalyst used is selected from zeolite-Y and Zeolite–β.

6. A process as claimed in claim 1, wherein the crystalline alumino-silicate catalyst is preferably modified using rare earth cations.

7. A process as claimed in claim 1, wherein the crystalline alumino-silicate catalyst is modified using lanthanum and/or cerium in the range of 10 to 30% by weight.

8. A process as claimed in claim 1, wherein the acylating agent is preferably acetic anhydride.

9. A process as claimed in claim 1 wherein in step (a), the alkylated benzene derivatives are reacted with acylating agent at atmospheric conditions.

10. A process as claimed in claim 1 wherein in step (a), the alkylated benzene derivatives are reacted with acylating agent at temperature in the range of 100° to 140°C and preferably at temperature in the range of 100° to 120°C.

11. A process as claimed in claim 1, wherein the solid catalyst separated in step (b) is regenerated for re-use.

12. A process as claimed in claim 1, wherein the conversion weight percent of alkylated benzene derivatives is in the range of 5 to 40 %.

13. A process as claimed in claim 1, wherein the percentage selectivity towards para position is in the range of 70 to 100%.